

**Section 1 Life and Geologic Time**

A. _____ time—Earth's history is divided into time units that make up a **geologic time scale**.

1. Time units on the scale are based on the appearance or disappearance of types of organisms such as _____, index fossils that lived during specific periods of time.
2. Geologic time is divided into four major _____.
 - a. _____—longest subdivision; based on abundance of fossils
 - b. _____—marked by significant worldwide changes in the types of fossils present in rock
 - c. _____—based on types of life existing worldwide at a particular time
 - d. _____—characterized by differences in life-forms, but differences can be regional rather than global
3. Geologic time can be subdivided only if fossils are present in rock records.

B. _____ **evolution**—Organisms have changed over time, most likely because of environmental changes.

1. **Species**—organisms that normally _____ only with other members of their group
2. Darwin's theory of **natural** _____—organisms more adapted to an environment are more likely to reproduce
3. Natural selection within a species occurs only if characteristics present in some numbers increase their _____.
4. _____ selection—breeding individuals with desired characteristics; humans use this type of selection when breeding domestic animals
5. _____ species can evolve from natural selection.

C. Trilobites—have an exoskeleton with three lobes; lived in oceans for more than 200 million years

1. Trilobite _____ position changed as the species adapted to various environments.
2. Trilobite bodies and _____ changed in response to changing environments.

Note-taking Worksheet (continued)

3. Continental collisions formed the giant landmass _____ near the end of the Paleozoic _____. These collisions may have dropped _____, causing the extinction of trilobites.

Section 2 Early Earth History

A. _____ time—from 4 billion to about 544 million years ago

1. Very few _____ remain from this time.
 - a. Many Precambrian rocks were deeply buried, causing the fossils in them to be changed by _____ and pressure.
 - b. Most Precambrian organisms lacked _____ parts.
2. **Cyanobacteria** are blue-green _____.
 - a. One of the _____ life forms to appear
 - b. Added _____ to the atmosphere through photosynthesis
3. _____ and Ediacaran animals appeared late in Precambrian time.

B. The _____ Era—about 544 million years ago to about 245 million years ago

1. Many organisms with _____ and vertebrates evolved in the warm, shallow seas.
2. _____ evolved to survive in water and on land.
 - a. Might have evolved from _____
 - b. Could obtain oxygen from _____ or from lungs.
3. _____ evolved from amphibians to survive farther from water
4. Several mountain-building episodes occurred during the Paleozoic Era because of _____ collisions.
5. Most marine and land species became _____ at the end of the Paleozoic Era.

Section 3 Middle and Recent Earth History

A. _____ Era—lasted from 245 to 65 million years ago

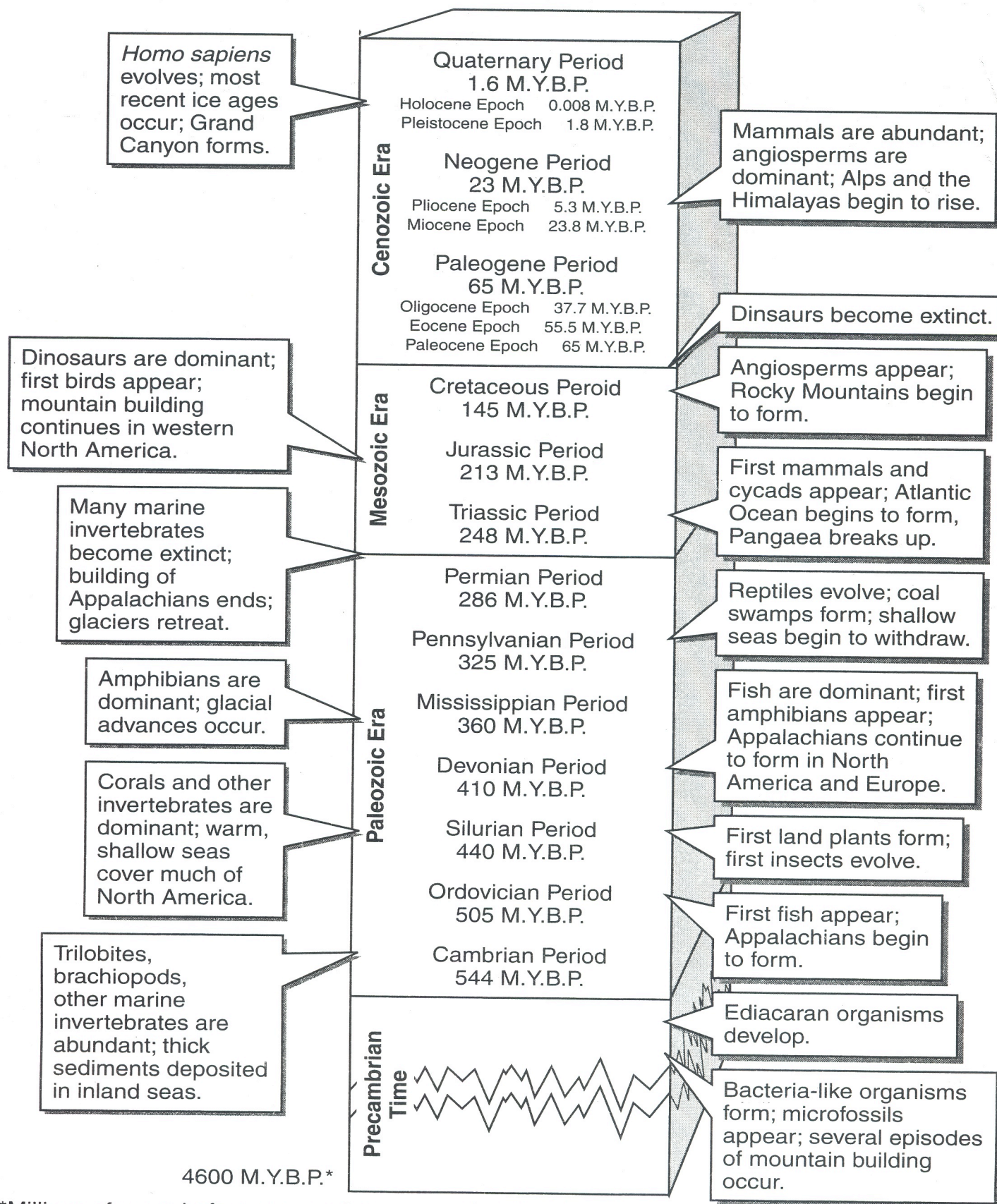
1. Pangaea separated into _____ and the climate became drier.
2. _____ evolved; they might have been warm-blooded, traveled in herds, and nurtured their young.

Note-taking Worksheet (continued)

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3. _____, which probably evolved from small, meat-eating dinosaurs, appeared during the Jurassic Period.
 4. Small, mouse-like _____, which are warm-blooded vertebrates with hair and milk to feed their young, appeared in the Triassic Period.
 5. _____, plants that produce seeds but not flowers, appeared in the Paleozoic Era.
 6. Flowering plants or _____ appeared during the Cretaceous Period.
 7. A great extinction, perhaps caused by a comet or an asteroid collision, occurred about _____ years ago, marking the end of the Mesozoic Era.
- B. The _____ Era began about 65 million years ago and continues today.
1. Many _____ formed, perhaps creating cooler climates worldwide.
 2. Mammals continued to evolve
 - a. Many species became _____ as the continents continued to separate.
 - b. *Homo sapiens*, or _____, appeared about 400,000 years ago.

Expanded Geologic Time Scale



*Millions of years before present that each unit of time began